

# Overdosing zinc could lead to antibiotic resistance

**Overdosing zinc in feed for just-weaned piglets could encourage the occurrence of drug resistant bacteria. This was one of the messages given by Prof Dr Jürgen Zentek from the Free University, Berlin, Germany. He spoke Tuesday at an international conference in Breda, the Netherlands, around the use of zinc in piglet feed.**

Zinc as zinc oxide is usually used as piglet feed additive to avoid post-weaning diarrhoea. Application of zinc, comes with precision as too high volumes of zinc in feed are known to end up in the environment. Usage in the European Union for that reason is restricted to 150 mg/kg feed.

**Prof Zentek** emphasised that not only the environment can be negatively affected by zinc – the piglets themselves can be too. He said, "Zinc has a very clear impact on the bacterial profile." He said that recent trials indicate that at high levels zinc can cause a significant increase of multidrug-resistant *E. coli*.

In addition, at higher dosages, use of zinc can lead to a significant increase of *E. coli* genetic diversity. Other bacteria, like lactobacilli, appear to be sensitive and populations can go down, see also *Figure 1*.

Zentek pointed to zinc's 'Janus head': "Too much zinc can be toxic, can have unwanted antimicrobial effects. And too little does not support growth as it is an essential trace element."

## Environment

The effect of zinc on the environment was explained by **Dr Eric Smolders** from the division Soil and Water Management at the University of Leuven, Belgium, in an excellent presentation. He said that setting limits for zinc usage like the EU did is all a matter of risk assessment.

He said, "There is a danger, but on a low level. It is not about tomorrow, but about the next 150-300 years. Zinc is a metal that is not biodegradable. All that we add today will stay in the soil. It depends on a regulatory choice on what timeframe we are looking at. So the usage of zinc versus antibiotics is a balancing of risk."

## Potentiated zinc

The event was set up by Animine, a French company producing potentiated source of zinc (HiZox), to highlight its introduction to the Netherlands, where it will be distributed by

Speerstra Feed Ingredients.

Trials of the efficacy of this zinc product were discussed by **Prof Paolo Bosi** from Bologna University, Italy.

Other speakers included **Dr Paul Bikker**, Wageningen University, the Netherlands, introducing the topic of zinc; **Dr Ramon Cos**, Technical Support Consulting, Spain speaking about the practical application of zinc in a veterinary practice; and **Gilles Langeoire**, GL Consulting, France, discussing piglet feed formulation and buffer capacity of ingredients.

by [Vincent ter Beek](#) Dec 11, 2013  
*Pig Progress*